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Vol. X APRIL, 1940 No. 4

CONTENTS

Common Colds 99
Naomi C. Turner, Ed.M.

Pupil Progress 104
Pearl E. Britton

The Program of Health and Physical Education in the Baltimore Public Schools 107
Louis R. Burnett, M.D.

The Nurse in a Secondary School 111
Anne R. Foster and Katherine A. Schultz

Editorials 113

Dr. Sven Lokrantz 115

Abstracts 116

Notes 127

Meetings 131

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A shockingly large amount of dust—literally hundreds of tons—is deposited annually over each square mile of the larger urban centers. The following figures, from independent studies made over a period of years, are not isolated examples but typical of the atmospheric pollution in large cities.[1]

	Tons of dust per sq. mi. annually
Baltimore	1800
Pittsburgh	1031
Salt Lake City	349
Cleveland	780
Washington	291

In many smaller communities even worse conditions may prevail under any of the following combinations: (1) soft coal, (2) low inland wind velocity, (3) concentrated manufacturing activity, (4) no zoning regulations, (5) no smoke abatement ordinances.

It is noteworthy that even a nonindustrial city such as Washington has so high an atmospheric pollution, due mainly to smoke from residences and office buildings.

This vast amount of soot and dust cuts off light. Shrader, Coblentz, and Korff, for instance, found that the amount of ultraviolet light in Baltimore was half that 10 miles from the center of the city.[1] Under such circumstances, to rely on winter sunbaths for the treatment of rickets may prove ineffective.

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[1]U. S. Public Health Bulletin No. 224.

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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

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COMMON COLDS*

NAOMI C. TURNER, ED. M.
Arlington, Massachusetts

Studies among several groups of school children support the theory that a variety of micro-organisms may act as the inciting agent in the production of upper-respiratory infections which are classed as "common colds." Groups of pronounced colds requiring numerous absences from school have been observed to appear consistently toward the end of the incubation period following the exposure of a class to a communicable disease spread through the secretions of the respiratory tract.

From October to June, I watched the interplay of colds and other communicable diseases in a nursery school of twelve pupils. Through the courtesy of the director, a daily notation was made for each child, throughout the school year, covering respiratory symptoms and the cause of any absence which occurred. The only series of colds for the entire year followed exposure of the children to chicken pox.

A three-year-old child attended school on November 5 and 6. The right nostril was red, and there was mucus in the left nostril. A diagnosis of chicken pox was made on November 7. On November 17, twelve days after the initial exposure, every other child in the class except two was kept at home for a cold. One of those remaining at school had mucus in the nostrils. The other had had chicken pox previously and went to bed with a cold one week later, the nineteenth day after exposure to chicken pox. We find, then, that within two or three weeks after exposure to chicken pox every child in school had had a severe cold.

At no other time during the year did the group as a whole suffer from colds, nor were there any other cases of chicken pox, measles, scarlet fever, whooping cough, mumps, or diphtheria. In several cases a child had sniffles or a cough which developed into a cold, but the infection did not affect the group as a whole.

This experience was sufficiently suggestive to make me think that observation of a larger group of children would be worth while. In a public elementary school, whose total enrollment was 598, I watched 160 children in the kindergartens and first grades from February 12 to May 28. In addition, a second grade class

*Reprinted from The New England Journal of Medicine, February 1, 1940, p. 194.

of 32 children was observed for a briefer period. The classes were followed during exposure to scarlet fever, measles, and chicken pox. The same policy of notation for each child for each day was carried on.

In one kindergarten class of 33 children, which we shall call "KSa," there were definite exposures to scarlet fever, measles, and chicken pox. Here, too, the peak of respiratory symptoms seemed to come near the end of the incubation period of the disease to which there had been exposure. For example, seven days after the exposure of these children to scarlet fever by a child who vomited in the class room and left school with a fever of 102°F., 12 children of this class exhibited symptoms of upper-respiratory infection. Two other children developed scarlet fever within this week without further exposing the class.

The only other times when such a peak of upper-respiratory symptoms was approached were 14 days following a class exposure to measles, when nine children had colds; 19 days following an exposure to chicken pox, when eight children showed respiratory symptoms; and 21 days following a second exposure to chicken pox, when the number again reached eight. These facts take on added significance when it is recalled that the incubation period for scarlet fever is from two to seven days, that for measles 10 to 14 days, and that for chicken pox two to three weeks.

It is interesting to note that on March 10, when among the 33 children in KSa, seven days after exposure to scarlet fever, there were 12 children exhibiting upper-respiratory symptoms, the other four classes (124 children) which were being observed had a combined total of only eight children either absent for a cold or showing upper-respiratory symptoms.

The co-operation of the principal of this school, together with the help of the teachers and the school nurse, made it possible to continue observations during the next school year from September 8 to December 24 on a still larger group, made up of 318 children distributed among two kindergartens and three first grade, three second grade and three third grade classes. Causes of absences were noted, whether from communicable diseases, colds or otherwise; notations were also made of such upper-respiratory symptoms as could be observed in the classroom during 10 or 15-minute daily visits.

During the period of observation, five classes participated in a definite measles epidemic. This fact makes the upper-respiratory data difficult to follow. In general a peak of upper-respiratory symptoms was found among the other children on the day that the new cases occurred. Five of six teachers in whose classrooms measles was prevalent were out with a cold from one day to a week during the period of the class exposure.

With the outbreak of measles in a classroom, it was noticed

that upper-respiratory symptoms were common among those who did not develop measles, as well as among those who were coming down with the disease. Of 11 children known to be immune to measles in one second grade class, six had marked upper-respiratory symptoms during the height of the epidemic; three had slight upper-respiratory symptoms and two were well. In a first grade class which was subjected to two exposures to measles between March 21 and April 16, each of the 13 children immune to measles exhibited upper-respiratory symptoms.

During the fall of 1937 there was an incident in a fourth grade class which is of interest. A boy was exposed to scarlet fever on September 9 by playing with a girl who on September 10 was diagnosed as having scarlet fever. He vomited on September 18, but was not otherwise known to be unwell except for having an earache. On October 14 he developed mastoiditis, for which he was taken to a hospital. There it was discovered that he was peeling, and a report was made to the principal that the boy had been attending school while having a mild case of scarlet fever. It is of interest to note what had occurred among his classmates. He was in school September 17 and also September 20 to 27; he was absent September 28 to have his ear treated. From September 20 to 29, eleven children in this class of 37 pupils were absent with colds. At this time the other classes under observation in the school, from kindergarten through the third grade, were having excellent attendance, with very few absences on account of colds.

During the fall of 1937 a mild epidemic of chicken pox occurred in a first grade classroom of 29 children. On October 26, a boy was kept at home with a diagnosis of chicken pox. Sixteen days from October 25, a second boy who sat diagonally in front of the first, began to show symptoms of chicken pox, and eight other children either showed upper-respiratory symptoms in the classroom or were absent with colds. The third week after the first exposure to chicken pox, the class showed its maximum of absences for colds and upper-respiratory symptoms for any week from September 8 to December 24; ten children had colds sufficiently severe to require home care. During this week among 289 children of the ten other classes being observed there were only 36 children who were absent for colds. Thus we see that with ten absences from the first grade classroom 34 per cent. of the children were absent on account of colds, compared with 12 per cent. in the ten other classes.

I recognize that no positive conclusions can be drawn from such data. But so frequently have the records shown an increase in the number of children having upper-respiratory symptoms toward the end of the incubation period following class exposure to certain communicable respiratory diseases that these organisms

seemed to be indicated as the cause of such infections. This evidence suggests that the etiologic agents of various communicable diseases may manifest their presence, more frequently than is recognized, through symptoms usually thought of as those of the common cold.

Some of the recent public health literature[1] suggests that the common cold is caused by a filterable virus, and that other organisms involved are always secondary invaders. In considering this filterable virus, it should be remembered that all that has been shown is that a single filterable virus can act as a causative agent in initiating cold-like symptoms. Common experience indicates that to accept the notion that a single virus is always the causative organism would lead to a false sense of security and many false expectations.

Certain well-recognized facts substantiate the belief that the causative organisms of upper-respiratory infections are various. In the first place, upper-respiratory symptoms may arise from several of the so-called "children's diseases." Measles is especially contagious when the catarrhal symptoms are manifest. Wagener[2] describes mild catarrhal attacks of measles during epidemics in adults who have had the disease. He believes these to be atypical cases. When measles appears first among aboriginal populations, it sweeps through them with a violence unknown among more civilized nations in which the disease has been endemic for centuries. The symptoms of scarlet fever may be very mild: fever may be absent, the throat may be only slightly congested, and the eruption may be so slight as to be hardly recognizable. Yet mild as well as severe cases may be followed by serious sequelae. Scarlet fever is only one manifestation of streptococcal infection. It is well known that a typical case can infect a milk supply, with a resulting epidemic of septic sore throat. Adults and older children who have been exposed to scarlet fever sometimes develop only a simple tonsilitis.

In the second place, in all epidemics there are a large number of unrecognized cases. Such abortive and missed cases are commonly spoken of in epidemics of anterior poliomyelitis, scarlet fever, mumps, chicken pox, measles and whooping cough, and in the majority the presence of specific immunity can be demonstrated by proper laboratory procedures. In Palestine, colds are common but diphtheria and scarlet fever were once thought to be nonexistent. It has now been shown that both diphtheria and scarlet

1. Smillie, W. G.: **Public Health Administration in the United States.** 458 pp. New York: The Macmillan Co., 1935.

2. Wagener: mentioned in Rosenau's **Preventive Medicine and Hygiene.** Sixth edition. 1481 pp. New York and London: D. Appleton-Century Co., 1935. p. 79.

fever do occur, but in such a mild form that they were formerly unrecognized.[3]

Careful attention to the abortive forms of disease might help to interpret many so-called "colds." In pneumonia such unrelated bacteria as the pneumococcus and Friedlander's bacillus are able to cause very similar clinical and pathologic conditions. The possibility that various organisms are the etiologic agents for the common cold has important implications with respect to the care of colds. Perhaps physicians and parents who keep children at home and in bed for minor colds are in reality helping to abort other common communicable diseases which infect the upper-respiratory tract.

Special care of fatigue and attention to weather exposure near the end of the incubation period of a common communicable disease to which there has been exposure in the school, family, or office may conceivably cut down the incidence of the common cold. If upper-respiratory infections called "colds" are due to various organisms, these infections will have different incubation periods rather than a constant one to three-day period. The concept of the variable nature of upper-respiratory infections has far-reaching hygienic implications.

3. Kligler, I. J.: personal communication.

* * * * *

Tuberculosis,—The provisional figures for up-State New York for 1939 indicate a new low resident death rate of only 36.4 per 100,000 for tuberculosis. For 1929, the rate was 64.5; for 1919, 125.7; and for 1907, the year in which the present fight against tuberculosis was organized, it was 152.8.

In Cattaraugus County, where there have been special demonstrations in the health program, there were in 1939 only 12 resident deaths from tuberculosis, a rate of 16.4 per 100,000. In the nine years since 1930, when the demonstrations ended, the average annual rate has been only 27.8.

Here is a record for other states, and for other populous counties to shoot at.

* * * * *

Causes of Death,—The Bureau of the Census has made public a study of the 1,450,427 deaths reported in 1937 showing that nine groups of diseases caused 72 per cent of all the deaths. The causes are: diseases of the heart 23.9 per cent; influenza and pneumonia 10.2; cancer and other malignant tumors 10; nephritis 7.1; cerebral hemorrhage and softening 6.9; tuberculosis (all forms) 4.8; congenital malformations and diseases of early infancy 4.4; motor vehicle accidents 2.7, and diabetes mellitus 2.1. Journal of the American Medical Association, Oct. 7, 1939, p. 1424.

PUPIL PROGRESS*

PEARL E. BRITTON

Director of Physical Education, Parker High School, Clarence, N. Y.

Much of the emphasis of late in education has been on project method of teaching, ability grouping, and individualized instruction. In Physical Education, we are primarily concerned with the last two, and ability grouping is merely a step in individualization. Wide variations of ability exist in each group, even though classes are divided into ability groups. These variations must be met. The best teachers have always been concerned with individualization of instruction, and it is to this that the Physical Education instructor must turn. Such instruction means the supervision of each pupil as an individual in order to improve the skill of that pupil.

In addition to this, we have other factors to consider. To insure our program of far-reaching influence in activities, we must develop student skill, student leadership, student officiating, student information of rules, student application of rules, and ethics. These must be developed if we are to meet the challenge of need for leisure time activity.

Since there seemed to be no battery of tests in existence to cover all of these needs and still include the activities used in smaller schools such as we see springing up all over the state, we have been attempting to set up such tests. These are built around the seasonal activity program in the high school department for girls. Such activities are limited by the equipment and space provided.

Many times I have listened to speakers telling of the programs used in their school, and have wondered what it would be like to teach in such an ideal set-up as that which they describe. I am teaching in a very ordinary situation with many advantages, as well as many disadvantages. It is the latter I will speak briefly so that you may have an idea of the problems to be met.

The first of these is the 300-minute requirement,[1] which if it is to be met at all, must be met in class periods, since the great majority of children come to school on busses and leave again as soon as school is over. This means that the two Physical Education teachers are working every period of the day, and still many groups are not receiving the full time requirement. There is only one gymnasium available, so the stage is used as a practice area.

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*Read before the New York State Association for Health, Physical Education, and Recreation, December 27, 1939, at Syracuse, N. Y.

1. A requirement of the New York State Department of Education that each pupil must have 300 minutes per week of Health and Physical Education Instruction.

This space could accommodate about eight or ten pupils, but is often crowded with 20 pupils at a time. Equipment is limited, but if more was purchased there would be no place for it. When the gymnasium was finished in 1936 no storage space was included and doors are so narrow that the parallel bars must be taken apart to get them through the doors and out of the gymnasium. No regular office space was provided for the instructors, so desks have been placed in the anteroom of the stage. In addition to this, the auditorium and gymnasium in smaller schools are combined by state regulation. This means that gymnasium classes must stop on the occasion of an assembly or practice for an assembly by a dramatics or music group.

Despite these handicaps, we are setting up a program which has thus far proven very workable. It is based chiefly on sports and games, though some attention is given dancing and health instruction. The testing done in this program serves as a motivation as well as a criterion for determining pupil progress. Certain skills have been set up as requirements for each activity in the program. These skills have been graded by difficulty, so that the first year a pupil has very elementary skills to learn and pass, and each year a child has skills progressively more difficult as the preceding work is passed. Each pupil may work as long or short a period of time on a skill as that individual's ability requires. At the beginning of each activity, either a part of the test is given or a game activity using the required skills is played. Thus the child meets with some degree of failure and sees a need for skill practice. The next procedure is the teaching of rudiments to the class as a whole. From here the pupils are assigned to ability groups on the basis of work done the preceding year. Student leaders then help individuals to improve in the skills. A pupil may, at any time, try a test in one skill or a group of skills, but may never repeat a test on the same day. By this means a child must do some practicing between test trials. Thus the child is measuring achievement against that of the preceding day. The pupil may also compare (by means of a wall-chart) her own ability and skill to that of others in her group. Also the child may compare her achievement to the standard set up for the group. Each pupil knows, by consulting the chart, just what is expected of her in the year, what she has accomplished, and how far she has progressed.

The student leaders are taken from the highest ability groups. They are neither assigned nor elected, but become members of this group by signifying willingness to do extra work in Physical Education. These girls receive extra instruction once a week, during club periods, on methods of individual instruction and testing.

By means of the previously mentioned program, pupils are

placed in ability groups designated as gymnasium 1, 2, 3, 4, with the latter being the highest ability group. Two days a week are devoted to skill practice. On one of these days the lowest two ability groups report to the gymnasium, and on the second day the advanced two groups report. The remaining three days the entire class reports, at which time some skill practice and testing go on, but more time is devoted to games using the various skills learned.

By means of this program, a girl entering the school might, if she had previous experience with the activity, pass several years of requirements in one year. On the other hand, a girl who is very skillful in one activity, and so in one of the higher groups there, might, in another activity, be in a lower group where skills of the type she needed are being taught or emphasized.

Written as well as practical examinations are needed to demonstrate knowledge of rules, and so these are included in the battery. Before a girl finishes her four years of Physical Education work, she must have a thorough knowledge of rules as well as the ability to officiate at intra-mural games.

When a girl has finished all four years of gymnasium requirements before finishing four years of academic work, she is required to join the previously mentioned group. Very few girls pass these tests so rapidly, however, and, if they do, are girls who are interested in the work sufficiently to be members of this group already. Membership here is limited then to the few of exceptional ability. The number of girls joining this leaders' group from choice is small, for the girls are often required to do much extra work in directing groups for demonstrations or programs or in assisting with the instruction of classes when instructors are taking care of first aid cases. No extra school credit is given these girls, so the only reward offered is the personal satisfaction the girl may derive from the work she does.

Since a pupil is checked as having passed an activity set-up on an objective basis but not discredited for failure, all work is in terms of positive achievement. Credit is not given for degree of skill, but each girl is encouraged to do her best. This program of measuring pupil progress, though still in an experimental stage, having been used only three years, has proven thus far to be very successful.

* * * * *

Diphtheria,—Throughout up-State New York in 1939 only 10 diphtheria deaths occurred, and in 1938 only 12. For 1939, this is a death rate of only 0.16 per 100,000 population. This is in striking contrast to the average annual rate of 10.1 per 100,000 for the five year period preceding the 1926 to 1930 immunization campaign against this disease.

THE PROGRAM OF HEALTH AND PHYSICAL EDUCATION IN THE BALTIMORE PUBLIC SCHOOLS*

LOUIS R. BURNETT, M.D.
Director of Health and Physical Education, Baltimore, Md.

The aim of the Division of Health and Physical Education in the public schools is to promote the physical development of all students to the end that each may attain and retain abundant health upon which effective citizenship first of all depends. The program includes the formation of daily health habits which keep one happy because of freedom from pain or handicaps; the social adjustments which come from playing team games honorably and fairly according to prescribed rules; and the development of hobbies which require physical activity and which can be enjoyed long after school days have ended. Realizing that these aims constitute the basis of happiness, successful citizenship, and effective living, the Division of Health and Physical Education attempts to meet these fundamental needs through a fourfold program of health, physical education, recreation, and safety.

The school health program includes as its principal branches, health service, hygiene of the school plant, and health instruction. The services of the doctors, dentists, nurses, bath attendants, and others all combine to promote the development of habits of health among pupils through co-operating with their parents and their family physicians. The doctors and nurses who serve in the *elementary* schools are the district health officers of the Municipal Health Department. They also serve the parochial schools and the homes of their respective districts. Adequate first aid equipment is provided in every school. The doctors and nurses in the *secondary* schools are employed directly by the Board of Education and are members of the teaching staff. The doctors are on duty two hours daily and the nurses from 8:30 A. M. to 4 P. M.

The maintenance of a hygienic school plant and a healthful environment for the pupil calls for the co-operation of all school employees. But it is the special responsibility of the school doctors and nurses who are required to make a regular inspection of the sanitary conditions of the school plant. They examine the hygienic condition of cafeterias, janitors' quarters, facilities for hand washing, shower baths, and toilet arrangements, as well as water, light and heat. Written reports on the results of these inspections are made by the school doctors to the principals and to the director of the division.

Health instruction, the last of the three branches of the school health program, teaches fundamentals of healthful living. Lessons

*Reprinted from Baltimore Bulletin of Education, A Journal of the Public Schools of Baltimore, Md., Vol. XVII, November-December, 1939, page 29.

in hygiene present facts which develop proper attitudes toward habits of healthful living. In the senior high school, where the student has a more mature understanding, our program aims to give him some grasp of subjects such as heredity, communicable diseases, recreation, nutrition, drugs, alcohol, tobacco, first aid, mental hygiene, industrial and community hygiene, sanitation, and safety in all its phases.

Baltimore was a pioneer among the large cities in recognizing the need for definite information on sex hygiene. Three carefully prepared lectures for girls on the facts of life are presented to every twelfth year girl by the nurse, doctor, or by the teacher of biology. The boys receive information on the venereal diseases and on personal hygiene in lectures given by the doctors and teachers of physical education.

Physical education (herein called *Physicals* because an abbreviated collective term is needed) is that branch of education which has to do mainly with the growth and development of children through the proper use of the larger voluntary muscles. Today's program involves far more than the ancient *physical culture* of 1890 concerned merely with developing large muscles; and far more than the *physical training* of 1910 which emphasized the methods of developing champions. Modern Physical Education is a unified program concerned with that vital phase of education which develops a sound body for a sound mind.

Physicals include (a) the development of neuro-muscular skills as shown by accuracy, co-ordination, and the quick reactions of the gymnastic class; (b) the development of game skills and team co-operation that occur in the playing of highly organized indoor and outdoor games; (c) the development of sound recreational habits for the proper use of leisure, either by team games or individual sports; (d) the correction of weakness in any body function through the program of individual correctives; (e) the development of character which comes through obeying the rules of the game and practicing desirable conduct during the heat of competition.

Every normal child in the elementary grades participates in a directed program of physicals during which time the teaching of skills, techniques, attitudes, and habits is emphasized by those teachers who are best prepared. The organized recess with pupil leadership and squad formations gives opportunity for the child to learn at least forty games by the time he has reached the sixth grade in a well organized school. In those elementary schools which possess a gymnasium, the program includes a varied list of group games, rhythmics, mimetics, singing games, folk dances, stunts, tumbling, and achievement tests. Allowances should be made for individual differences and all available equipment should be utilized.

All students in the secondary schools receive a broad experience in neuro-muscular activities. Not every school possesses the fine equipment and adequate space of the more recently constructed plants, but the time allotment of two or more periods per week is the same in all schools. All students are required to take part in physicals and for this credit toward promotion is awarded. Baltimore was one of the first cities to adopt a system of achievement tests with a definite scoring method and the personal record card for assembling and evaluating the pupil's accomplishment. This system will be described in a later article. Participation in voluntary after-school athletics or in musical organizations is not allowed to count as the equivalent for physicals because the objectives of these activities are not the same. Students whose illness or handicap does not allow participation in the more vigorous forms of activity are individually assigned to a modified course and receive full credit.

The shower baths in thirty schools, so efficiently conducted by the Free Public Bath Commission, are essential to the program of physicals. More than two million showers were taken last year by students in those schools where towels and soap were furnished by attendants.

The Board of Education has recognized the importance of athletics in education by having a Committee on Health and Physical Education consisting of three members of the School Board; by appointing a Citizens Advisory Committee; and by placing the responsibility for athletic management in the Division of Health and Physical Education. The centralized control of the athletic program in the secondary schools has resulted in a workable set of rules, competitive placement of purchase orders through the Division of Business Management, a much larger income which is distributed more equitably than formerly and, most important, a fourfold increase in student participation.

The Baltimore athletic program was placed first in the national survey conducted by the University of California. At the San Francisco convention of 1939, the University exhibited a large wall chart with the Baltimore system and its Handbook on Athletics ranking at the top of fifty city outlines.

Intramural sports for girls and boys are emphasized in the first nine grades, but the high schools also have the slogan "a game for every student." Each secondary school conducts interclass contests for boys and girls, endeavoring to interest every able-bodied student in one team game a season. The aim is to develop a liking for some games which may become a physical hobby to be played long after graduation. The regular teachers of physical education coach the interscholastic and interclass teams in a program which embraces 26 games for girls and 24 for boys.

Naturally the safety aspects of all phases of the division's

work receive continuous attention. A manual of suggestions has been in use for several years, and the course of study in health includes a series of safety lessons. The regular inspection of buildings by the school doctors is designed to promote safety. There is complete co-operation of all divisions in the Department of Education regarding safety education and with the national and local safety councils, and in the organization of the school safety patrols.

More and more it is evident to schoolmen everywhere that health education through proper physical development is of pre-eminent importance; that real teaching here as elsewhere involves properly prepared teachers and adequate equipment. Most important in health teaching is a sympathetic understanding of child psychology. The finest teaching takes place only where the teacher is a genuine leader and one whose habitual attitudes are admired by the pupils. This is, of course, true in all teaching, but it is especially true in physical education. A program of education in health and physical development requires skillful organization and continuous study if all available resources are to be utilized in an effective way. Finally, a health education program calls for skillful administration to the end that it may operate efficiently. Such a program can never be said to be completed, but genuine progress is, we believe, being made.

The Baltimore Program of Health and Physical Education:

1. The better teaching of health facts — learning by doing.
2. The finding and correction of physical handicaps by the annual medical examination.
3. Elements of sex education in the senior high schools.
4. All secondary students participating in achievement tests giving positive ratings as basis for promotion credits.
5. The reduced number of exemption cases receiving no class exercises.
6. The large increase in voluntary after-school participation in sports.
7. The program of successful interscholastic sports which includes 26 kinds of games for girls and 24 for boys.
8. The improvement in fields and equipment for the conduct of games.

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Comment,—Baltimore is one of the few cities in this country where there seems to be anything like proper integration between the different phases of the school health program. In this and in succeeding Journals some details of this unified program are being presented. Editor.

THE NURSE IN A SECONDARY SCHOOL*

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KATHERINE A. SCHULTZ
*Nurse, Polytechnic Institute***

"Never a dull moment" may truthfully be said about the average day of the school nurse. From the time of arrival at 8:30 A. M., from the moment she dons her white uniform, her day becomes colored with many interesting duties frequently including grave responsibilities. Before nine o'clock the health suite may contain several students who are suffering from a hastily eaten breakfast, a sudden cold, or some obscure ache. First aid advice or bandaging is given, and only a few must wait for the coming of the school doctor.

After the first rush is over, there are students to be found and prepared for the complete examination given annually by the doctor. The four page history and examination record is started by the nurse who usually gives the sight and hearing tests and then takes notes as the doctor proceeds. Whenever this examination reveals defects that need correction, the parents are notified by letter and invited to have a conference with the nurse. At this conference, the nurse explains the purpose of the school physical examination and interprets the findings, generally telling the parents wherein their child is normal and where medical attention is required. When the parents ask what should be done, the nurse first refers them to the family doctor. If financial circumstances will not allow the student to be placed under a doctor's care, the nurse writes a letter of recommendation to some clinic of the parents' choice and thus the correction of the student's defect is begun.

Sometimes parents ignore the first notice of the student's defect for as long as a month, and then a form letter is dispatched urging the parents to have the defect corrected immediately. If this notice is also ignored, the nurse, in the more serious cases, endeavors to contact the parents personally. The vocational guidance counselors assist greatly in obtaining the co-operation of the parents by stressing the importance of health in relation to good scholarship.

For each student examined, a chart is kept giving his past medical history, the findings of the school doctor, the record of notices to parents, and the dates on which defects were corrected. Another form of record applies to pupils who come to the infirmary for treatment. In case of accident still another form is used, a

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**Public Schools, Baltimore, Md.

copy of which is sent to the Baltimore Safety Council. Entering the data on these charts takes much of the nurse's after-school time.

Before a student is allowed to practice for any school team the school nurse and the coach arrange for an examination of his heart and lungs. Doubtful cases are rechecked frequently and close supervision is maintained. When games are played which require physical contact, a doctor or nurse is always present.

Another duty of the nurse is to provide immediate care for any student who becomes ill or injured during the course of the day. First aid is always given at once, and if the injury is serious, arrangements are made for further treatment. For example, John Smith fell in the mechanical drawing room cutting his ear severely. The laceration needed sutures. Mrs. Smith was reached by telephone. She in turn called the family physician who advised that Johnny be taken to the South Baltimore General Hospital where he happened to be at the time. The school nurse accompanied the boy and met Mrs. Smith at the hospital. With Johnny in the competent hands of the doctor, the nurse returned to school to resume her duties there.

The student who pretends an ailment is thoroughly examined but must return to class.

Few people realize that there is a Maryland state law, passed in 1918, which requires physical activities of all students. Consequently, no student is excused from the regular physical activities without a recommendation by *both* the family physician and the school doctor. Should these two physicians disagree, a form letter is sent to the former notifying him of the law and requesting him to allow some form of physical activity even though limited. If on the other hand the school doctor finds that any form of exercise would be harmful to the student, both the student and the family are notified. Thus the school is protected from undue criticism should the student later be debarred from entering the public service.

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Scabies,—A treatment for scabies which is "entirely free from discomfort or risk; can be carried out anywhere and requires no special skill and is inexpensive" is thus described by W. S. Parker in THE LANCET for April 29, 1939—

"It consists in painting the whole of the patient's skin with a 25% aqueous solution of sodium thiosulphate, allowing this to dry and then painting with 5% hydrochloric acid. The result is a very fine deposit of sulphur on the skin without a tedious and somewhat unpleasant inunction. A full course consists of two treatments on each of 3 successive days." Abstracted by Jas. F. Rogers, M.D.

EDITORIALS

Naomi Turner's observations on respiratory infections among elementary school children reprinted in this issue from the N. E. Journal of Medicine, under the title of "Common Colds" add more and badly needed information about the communicable disease problem among school children. Although school health service was originated to combat the problem of communicable disease in the school, but little attention has been given of late to this important aspect of health supervision in the schools. True we no longer see the epidemics of diphtheria, tracoma, measles, and scarlet fever, which formerly were of such grave proportions in the early days of health service. On the other hand, some authorities question how much control the school effects over the spread of contagion. Immunization and a more enlightened community are claimed to be responsible for the lowering of morbidity rates. Be that as it may, Mrs. Turner's article should interest every school health worker. If the implications in her article are true, it means attention must be given to the study of the common cold among school children. Her paper raises the question once more in the minds of health officers and pediatricians of the value of a program of early exclusion of children with the common cold. What is of particular significance about the article is that it comes from an educator. Chope stated in a personal communication that he had experienced a much lower evidence of respiratory infections among his school population and a parallel drop in the morbidity rate for the common communicable diseases, one season during a polio scare when parents were warned to keep their children home if they showed the slightest sign of a cold.

Health officers and pediatricians may agree to the need for study of this problem, but will the educator? Mrs. Turner's paper is very encouraging. The question which has to be considered is what will such a policy of exclusion do to the attendance record on which, in some states, state aid is based? In this respect it is of interest to relate that Kaiser, according to Maxwell, made a study of this question under controlled circumstances in two public schools. A higher total attendance record was achieved in the school where early exclusion was practiced than in the school where the traditional procedures were in effect. The children excluded early returned to school more promptly, while children who stayed in school not only were much sicker themselves and out of school longer, but were responsible for spreading the infection to many more individuals in the room. This appears to be the only bit of evidence on this very crucial subject. The time is ripe for a thorough, carefully controlled study of the problem. Mrs. Turner by her series of observations reminds us that the common cold is our big unsolved problem in the schools. It is regrettable that her

paper does not answer the question that physicians will raise. Were the cases that reported as colds medically diagnosed or simply reported as such by the family? When it is a policy to exclude for signs of colds, and when parents know their children have been exposed to a communicable disease, a parent's diagnosis may not be reliable.

Regardless of this fact, her observations are a challenge to school health workers to give further consideration to the common cold. Further studies along this line of approach will be of distinct assistance to the epidemologist, the pediatrician, and the school administrator. George M. Wheatley, M.D.

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The program for testing progress in physical education, which is presented on page 104 of this Journal merits careful study by those teaching or supervising physical education in the schools. Superintendents undoubtedly will get help from it. The suggested program is so far in advance of the set-up usually found even in this supposed modern day in education—where even yet in physical education it is not at all uncommon to find pupils rated almost wholly on docility, i.e., on attendance and effort—that the suggestions will be startling to those who have given little attention to the fact that a successful program in physical education shows definite advancement in power and in skills.

This program of tests and checks shows these advantages:

a. It classifies pupils by skill and ability and permits classes to be organized on this basis.
b. It has progression, stepping from the easy to the more difficult.
c. It has interest, because it presents definite attainable goals, and pupils therefore are able to note their own progress.
d. It has social elements of helpfulness to teachers and to other pupils.
e. It gives pupils a much greater knowledge of rules, techniques, and strategy than they ordinarily acquire.

Too often we have the type of teacher who has been so thoroughly hooked by the bait of "progressive" education that his major activities are taking attendance and sitting on a bench while the children "play". That much of this "play" is far from constructive does not seem to disturb the instructor trained in a Teachers' College which instills "progressive" ideas at the expense of giving real training in skills and techniques. Since there are schools of physical education where real training in the skills and practical physical education teaching methods are given, it is a pity that so often superintendents draw their teachers from the lackadaisical type of school which seem to base their theory and activities on the idea that a child should do only those things that he wishes to do. Such education is poor training for life. C. H. K.

DR. SVEN LOKRANTZ

On March 11, 1940, at his home in Los Angeles, occurred the death of Sven Lokrantz, M.D., from July 1, 1924, Director of the Division of Health and Corrective Physical Education of the Los Angeles City Schools.

Dr. Lokrantz was born at Munsö near Stockholm, Sweden, on September 22, 1892. In the field of physical education the education of Dr. Lokrantz was extensive. He won a diploma from Unman's School of Swedish Gymnastics, Stockholm, Sweden, in 1910; a diploma from the College of Preceptors, London, England, in 1912; a certificate from the University Tutorial College, London, England, in 1913; and won a diploma from the Duben School of Gymnastics in 1913. He graduated from Tuft's College Medical School, Boston, Massachusetts, in 1918, with the degree of Doctor of Medicine. He moved to California in 1918, and in 1920 became a naturalized American citizen. Dr. Lokrantz was appointed Assistant Supervisor of Corrective Physical Education on October 3, 1918; was made Supervisor on October 4, 1920; and was appointed Director of the Division of Health and Corrective Physical Education of the Los Angeles City Schools on July 1, 1924.

Positions and Honors: Director, Lokrantz School of Corrective Physical Education, Boston, Mass.; President, American Association of School Physicians, 1931; President of the Southern California Public Health Association, 1931; President Ling Foundation; Medical Director, Olympic Games at Los Angeles, 1932; knighted by the King of Sweden in 1930—Royal Order of Vasa—First Class; decorated with Order of the North Star of Sweden in 1933; decorated by the Queen of Holland—Oranje Nassau Order; and other decorations and honors.

Dr. Lokrantz's energy and ability built up the Department of which he was in charge. At the time of his death, it was one of the outstanding Departments of the sort of any public school system in the United States. There were on the Department staff 54 physicians, 21 dentists, 93 nurses, and 146 teachers of corrective physical education.

Dr. Lokrantz is survived by his wife, Carolina Winston Lokrantz, and by one son, Sven W. Lokrantz.

The following statement *in memoriam* is contributed by a physician who has been his friend for many years, and who was his immediate associate in the public schools of Los Angeles.

"Dr. Lokrantz's genius for organization and administration was recognized by many appointments to positions of leadership and responsibility. In 1931 he was President of the Southern California Public Health Association and head of the American School Physicians Association. In 1932 he justified the confidence of his professional associates who appointed him Medical Director of the Olympic Games by planning and carrying out a program of

medical care, health supervision, and first aid for the Olympic athletes; this earned for him the commendation and gratitude of all countries and brought to him honors from his own and foreign countries and knighthood from his native land of Sweden.

In addition to his professional ability he was a man of rare charm and great kindliness of nature, which expressed itself in warm friendship for many people and in earnest devotion to the welfare of little children.

Dr. Lokrantz has made a great contribution to school health education, and will go down to posterity as a leader in corrective physical education in America. His many friends and colleagues mourn his passing, and extend to his family their heartfelt sympathy. C. Morley Sellery, M.D."

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ABSTRACTS

Mental Hygiene in Supervision,—Pupils are still too often acquiring habits of failure, rationalization, and self-pity. Teachers with poorly integrated personalities, and socially undesirable emotional responses, are often directly or indirectly the cause of maladjustment in their pupils. A recent report on the mental health of New York City teachers reveals an appalling percentage of mental disorders. This is probably true throughout the United States.

Many cases of mental disease in teachers, as in others, are directly traceable to home and school experiences in childhood. The exacting standard of behavior which public opinion has set up for the teaching profession in some communities can be considered as a real contributing cause. However, it seems certain that many cases of mental sickness in teachers can be directly attributed to the wrong kind of supervision.

Just as the mental health of the pupils is impaired by the teacher who is mentally sick, so is the health of the teacher affected by that of the supervisor. If knowledge of mental health is to prevent mental disease among future citizens, the practice of its principles must begin at the top.

Far too many superintendents are demonstrating how to destroy the mental health of teachers. These seem to be the rules they follow:

Criticize a teacher adversely in the presence of students and faculty.

Fail to comment on good techniques.

Mention only wrong practices.

Insist that there is only one correct method.

Imply that every error in judgment is an evidence of disloyalty.

Continually praise fine achievements of other teachers.

Take notes during observations but never discuss them with teacher.

Express unalterable faith in standard test norms.

Change right decisions to wrong after pressure from outside.

Arrive at hasty conclusions in matters of discipline.

Hold innumerable teachers' meetings dealing with trivialities.

Demand quantities of written reports, summaries, and plans.

Always insist upon the observance of the letter of the law but not the spirit.

Discuss one teacher's weaknesses with another.

Interrupt lessons to display superior knowledge.

In a school system of thirty-five teachers, two were driven into mental hospitals by a superintendent who observed most of the foregoing rules. The fact that few teachers remain in his system more than one year, when they can secure positions elsewhere, indicates that these two were not congenital cases. Charles L. Worth, Supervising Principal, Lambertville, N. J. The American School Board Journal, February, 1940, p. 38.

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Childhood Fears,—Fear is a biologic mechanism intended for the preservation of life. Behavioristic psychology teaches us that the infant is born with two basic fears: that which accompanies loss of physical support and that which is occasioned by loud sound. These are presumably fear instincts utilized by primitive man as warnings against an approaching enemy. They called forth various defense processes which, by fight or flight, helped to protect the individual or the tribe from injury or extermination. Whatever other fears a person may possess, this school asserts, they are acquired through environmental circumstances. It is significant that mentally defective children as a rule do not suffer from many fears and that, conversely, the child with high intellect, perhaps because of his keener imagination, often suffers from more numerous fears than his fellow of only average intelligence.

There is no other emotion which is more capable of undermining the self respect and security of the child. A youngster harboring fears is incapable of participating whole-heartedly in the usual activities in which children indulge as a means to physical, mental, and social development. Failure and the fear thereof become an obsession. Ultimately they become a bad habit, tolerated only superficially, often camouflaged by reckless bravado.

In the child, fears usually take on definite form. His frankness and his inexperience in life in many instances cause the youngster to name the fear object in simple terms, in an unconscious effort to be relieved of his burden. It is only after he has

been scolded or ridiculed that the real cause of his terror becomes a hidden secret, so hidden, in fact, that the child himself soon loses knowledge of its origin. Under such circumstances the problem becomes extremely difficult and occasionally impossible of solution.

Many fears are acquired as a result of sudden shock. When they make their appearance immediately or soon after the initial scare, and when the causative factor or factors are clear, these fears usually yield to reasoning. When, however, as frequently happens, the origin becomes concealed, the problem becomes a very difficult one. Herman M. Jahr, Hygeia, December, 1939, pages 1091-1094. Abstracted by Earl E. Kleinschmidt, M.D.

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Open Air Classes,—Special classes for the physically below-par children have been proved costly, and educationally and socially unsatisfactory, according to the report, *The Physically Below-Par Child, Changing Concepts Regarding His Care and Education,* recently issued by the National Tuberculosis Association.

Today it is known that no child, regardless of how underweight or malnourished he is, will develop tuberculosis unless the tubercle bacilli enter his body. The likelihood of effective exposure depends upon many factors other than the child's physical condition. Hence, the term, "pre-tuberculous," no longer is acceptable, and its use must be discarded, the report emphasizes.

Prevention of tuberculosis among children can not be gained through the open air class. The only way to prevent the occurrence of the disease is to prevent contact with an open case. This is most effectively achieved by removing the open case from home.

Another factor that must be recognized is the relative unimportance of tuberculosis among the majority of children between the ages of five to fifteen.

"A school child who has a positive tuberculin reaction, but whose X-ray reveals nothing abnormal, who is apparently in good health, and who, after a thorough investigation of his associates at home and elsewhere, is found not to be in contact with an open case of tuberculosis, usually does not need special care."

"Authorities now agree that weight in itself is not a criterion of nutrition," the report states. "Underweight is not necessarily a symptom of malnutrition nor are all malnourished children underweight."

The age-weight-height tables have been proved unscientific and unfair as a basis of comparison. While nutrition may be a factor in underweight, such factors as individual and family body build and the clinical history of the child must be considered.

"Fresh" air, regardless of temperature, is a theory long since dropped from tuberculosis treatment as being scientifically unsound. Experience has proved that too much cold air is actually dangerous. Authorities now agree that the temperature of 65 to

70 degrees is advisable for children of lowered vitality as well as for children in normal health.

Supplementary feeding is open to question. Adequate food and regular meals at home are better than extra food at schools, pediatricians agree.

Faulty sleeping habits at home are not overcome merely by providing sleep during the school day.

Child psychologists constantly emphasize that segregation is unwise and must be avoided when possible, the report points out.

The abandonment of open air classes as they are now conducted in many states and cities is advocated in the report. The physically below-par child should have a lightened program but attend regular classes, and the rest period and supplementary feeding should be adapted to the needs of the individual child. The proven features of these classes should be extended into the regular curriculum so that all children may benefit. Bulletin of the National Tuberculosis Association, January, 1940, p. 3.

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Pasteurized Milk,—The relative merits of pasteurized and raw milk from the nutritive standpoint have been settled once and for all so far as England is concerned. This at least is the implication of the final report of the *Milk Nutrition Committee* which indulged during the course of several years in a wide range of experiments and studies to determine whether or not raw milk is superior nutritively in any respect to pasteurized milk. The Committee, in terminating its consideration and study of this question, concluded on the basis of their research, *broadly*, that

1. the generally accepted value of milk to growing children has been abundantly confirmed and

2. that apart from infants who might be fed exclusively or almost exclusively, on cows' milk there are no nutritional differences of any practical importance between the raw and pasteurized varieties of milk.

Among the experiments which led to these conclusions were several which involved groups of calves, some of whom were fed pasteurized and others raw milk as principal or important parts of their diets. Milk drinkers were found uniformly to exhibit superior evidence of good health, as compared with non milk drinkers, but no substantial differences were found in this respect between the individuals who had raw milk and those who had pasteurized milk. These findings confirm the studies and observations made in the United States.

As to the sanitary value of pasteurization there are no grounds for debate. In Illinois no less than 69 epidemic outbreaks of communicable diseases have been attributed to contaminated raw milk supplies since 1917. Together these outbreaks were responsible for 1,844 known cases of illness traced directly to the milk supplies

in question. During the same period only one outbreak was attributed to a contaminated pasteurized milk supply, 60 cases of scarlet fever. In this instance, the evidence was not entirely conclusive that the milk supply was actually at fault but it appeared that improper operation of the pasteurizing equipment or handling of the milk subsequently had permitted contamination.

It would appear that evidence so overwhelming in favor of pasteurization as a practicable safeguard of milk supplies would convince the most skeptical. Illinois Health Messenger, January 15, 1940, p. 7.

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Diphtheria Control,—Perkowsky, speaking before the Belgian association of social medicine, pointed out that diphtheria cases were still numerous. The speaker discussed the procedures in use to prevent diphtheria, such as the closing of schools, inoculation, detection of germ carriers and isolation of those infected. These measures, he said, have proved insufficient. The detection of germ carriers took too much time and in epidemics the results of the examination of specimens ran the risk of being too late to permit an effective prophylaxis. While declaring himself in favor of inoculations thoroughly and extensively performed, Perkowsky proposed regular daily examinations in school centers in time of epidemics. These examinations, conducted by school physicians, required no complex organization and permitted serum injections at once, on the least suspicion. Serum injections, promptly administered and in sufficient quantities, he said, were efficacious in all cases. Journal of the American Medical Association. February 24, 1940, p. 676.

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Rabies,—Exposure to rabies or hydrophobia through the bite of a rabid dog is a common experience in Illinois. Each year about 5,000 persons are treated subsequent to dog bites for the prevention of this disease with anti-rabic vaccine distributed free by the State Department of Public Health. The diagnostic laboratories find positive evidence of rabies in from 500 to 1,000 of the dogs' heads submitted yearly for examination. In 1938, positive evidence of rabies was found in 827 heads.

A haunting fear of what may be in store is likely to pursue the person who has been bitten by a rabid dog. When may one feel that the danger of rabies is over? Is treatment with anti-rabic vaccine a sure preventive? What if no treatment is given? These questions are prominent in the mind of every person exposed to rabies. No one can answer either question with certainty. Only the general experience may be cited.

Usually symptoms appear in man after a rather prolonged period from date of bite by a rabid animal, thirty to forty days. This *incubation* period may be shorter or longer, however. The

likelihood of symptoms after the lapse of three months is remote. Likewise, the onset of symptoms in less than one month is uncommon. The character and location of the wound made by a rabid animal appears to be an important factor in the time element. The virulence and the dosage of the virus of rabies are doubtless important factors also. Severe head and neck wounds seem much more likely than others to be followed by rabies and much more quickly. Occasionally symptoms appear within ten days.

Not every person bitten by a rabid animal will suffer from rabies even if nothing is done to prevent it. Students of the disease believe that 15 to 30 of each 100 persons exposed will come down with the disease and die therefrom if not treated. Recovery from rabies after the onset of symptoms is extremely rare if it ever occurs.

Treatment, if started soon enough before the onset of symptoms, is almost, but not quite, a guarantee of prevention. Occasionally a patient is lost in spite of the best possible treatment started in good time. Data collected from all parts of the world by the League of Nations show only about 36 deaths among each 10,000 treated persons who had been exposed definitely to rabies. This was the experience among 758,182 persons treated during a period of eight years. Of that number, 2,743 died. Assuming that 20 in each 100 persons exposed will get rabies if untreated, 200 in 1,000 would die against the world-wide demonstrated rate of less than 4 per 1,000 among treated persons.

In Illinois about 5,000 persons are given anti-rabic treatment each year. Some of these are not known definitely to have been exposed although bitten by dogs at least suspected of being rabid. The majority are bitten by dogs known to be rabid, however. In 1938, when 5,055 persons were treated for the prevention of rabies, there were 5 deaths attributed to that disease or about 1 in each 1,000 persons treated. This gives a rate considerably below the experience reported by the League of Nations and greatly below the probable rate if no treatment were given.

There is surprisingly little seasonal variation in the risk of rabies in Illinois. During 1939 the number of dogs' heads submitted to the diagnostic laboratories for examination ranged between 20 and 30 per week straight through. Likewise the number of persons given anti-rabic treatment with vaccine supplied by the State Department of Public Health varied but little from month to month. Illinois Health Messenger, February 1, 1940, p. 12.

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Functional Scoliosis,—Scoliosis is a lateral curvature of the spine usually associated with rotation. Functional scoliosis is such a curve which the child is able to correct voluntarily. There have occurred no permanent changes in the bones or soft tissues, and

the extent of the deformity is invariably within the range of normal spinal movement. This condition assumes significance only if it be permitted to exist sufficiently long to produce structural changes with subsequent uncorrectable deformity.

The exact causes of functional scoliosis have never been determined. It is, however, practically always associated with weak musculature and with habitual faulty posture or attitudes. It is often found with other evidences of muscle weakness such as round shoulders, protuding abdomen, and relaxed painful feet. A slight difference in leg length may lead to spinal curvature, and cases have been reported in which a curve resulted from disabilities in one arm, from wry neck, and from imbalance in hearing or vision.

Functional scoliosis occurs in about five percent of the population, nearly all the cases being found in children. The rapid growth of a child, with a consequent rapid fatigue, makes him particularly vulnerable to such deformity. Prescoliotic indications may be seen in school children who have inclinations to assume asymmetric attitudes in walking, standing, or sitting. These might be termed postural slouches. At school age, spinal curvature is more commonly found in boys than in girls, but at adolescence it is more often present in girls. This may be due to the fact that boys more rapidly develop the muscles which correct the deformity or that the girls are more conscious of physical defects at this age period.

The deformity is not accompanied by pain or any other symptoms which the patient may notice. Most of the cases are found accidentally by parents, by dressmakers, or by the patient himself when he sees his image in a long mirror. The curve—as outlined by the examining physician who marks the tips of the vertebrae with a skin pencil—is C-type with the convexity to the left, in over 90 percent of cases. Thus the right shoulder is somewhat depressed. Many investigators believe that the curve is away from the left because of the pressure of the great blood vessels passing from the left side of the heart to form an arch; there exists, therefore, a solid column of blood under great pressure left of the midline of the body. Others have pointed out that the curve is produced in school children by their sitting and writing in one-armed chairs. Also, carrying books to and from school would aid in producing the same curve. The books are usually carried in the right hand, most of their weight being placed on the right hip.*

Specific treatment is necessary if the scoliosis has been present for a long period of time or if the child shows no improvement following general treatment. The writer favors starting at once with definite corrective exercises in all cases, in addition to increasing the tone of the general musculature. There may be a definite group of weakened muscles which have allowed the stronger ones of the opposite side to become shorter. Thus, the shortened muscles

must be stretched while the weakened group is made stronger. Various exercises have been devised which develop one specific group. This direct treatment, as noted above, is combined with general postural work, deep breathing, and mild competitive playground activities.

If it be found that the patient's muscles are not able at first to maintain the corrected position, then a light back brace, abdominal support, or a corset is indicated. Such an appliance is for temporary use only, since it merely prevents strain on the weak muscles.

In summary, it is pointed out that the spine must be kept balanced during the years of growth in order that slight curvatures may not develop into structural deformities with permanent anatomic changes. Once structural changes have been produced, full correction is never accomplished and improvement is often most difficult to obtain. Parents should be on the lookout for changes in the posture of their children, and patients with curvatures should be impressed early with the fact that long and careful training is essential for both the gaining and the maintenace of correction of their spinal deformities. Paul M. Girard, M.D. Public Health Nursing, January, 1940, pages 6-9. Abstracted by Earl E. Kleinschmidt, M.D.

*Has any study been made of the percentage of C curves in left-handed persons?—Ed.

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Vitamin A Deficiency,*—The authors describe a skin lesion which consists of horny papules scattered over the anterior and lateral surfaces of the thighs and calves and the patellar region of the lower extremities. They say that the term "goose skin" has been applied, but the term "phrynoderma", meaning 'toad skin', is more descriptive.

Photometric studies convinced Lehman and Rapaport that the skin lesions were due to Vitamin A deficiency. There were nine children in the study, and nearly all were from families on relief. They point out that a study of diets of families on relief indicated that 70% of the diets furnish less than 2,000 units of Vitamin A. The authors say that in such low economic strata moderate deficiency of Vitamin A sufficient to produce cutaneous manifestations may not infrequently occur in individual children because of: (1) inefficient purchase, (2) diversion of funds to amusements, (3) because of caprice in choice of foods and seasonal variations in diet, or in the Vitamin A content of foods. In addition to these considerations, one of the most important causes is an increased or higher than average minimal requirement due to individual variation in the need for Vitamin A. *Cutaneous Manifestations of Vitamin A Deficiency in Children. Edward Lehman, M.D., and Howard G. Rapaport, M.D., J.A.M.A., Vol. 114, No. 5, February 3rd, 1940, page 386. Abstracted by George M. Wheatley, M.D.

Focal Infections,*—This is a critical review of the question of focal infection. The authors make a case against the indiscriminate removal of teeth and tonsils. The tonsil question is of particular interest to school physicians who face this problem of diseased tonsils more frequently than any other condition in the school examination.

The authors state that in a study of 40,000 surgical operations performed between 1928 and 1931, one-third were for tonsillectomy. They indicate that in almost every conceivable disease the tonsils have been suspected as a "focus of infection". On the other hand, they state very pointedly there are no standards whereby one can judge whether tonsils at any given period of life are normal or not. They say that criteria such as "large", "scarred", "small", "adherent", "crypts plugged was caseous material", or "the cultivation of various forms of streptococci from the tonsils" are all unreliable. They do say, however, that there appears to be general agreement that tonsils should be extirpated in persons subject to repeated attacks of acute tonsillitis or peritonsillar abcesses.

This article is valuable to school physicians not only for the critical review of an important problem, but also for the excellent bibliography available in the reprints.

Whereas many authorities believe that by inspection a physician cannot generally tell if the tonsil is chronically infected, Reimann and Havens believe that:

(a) Persistent redness of the tonsils and adjacent membranes, and exacerbations of acute inflammation, often with pain or discomfort on swallowing, with or without regional lymph node swelling, and tenderness, or
(b) Systemic signs or symptoms such as fever, leucocytosis and rapid blood cell sedimentation, or
(c) Swelling, pain or tenderness of the lymph nodes which receive tonsillar lymph,

are the general criteria for a diagnosis.

In other words, there ought to be some clinical or other evidence of actual inflammation of the tonsils before, from inspection, they are regarded as infected. *Focal Infection and Systemic Diseases. A Critical Appraisal. Hobart A. Reimann & W. Paul Havens, J.A.M.A., Vol. 114, No. 1, January 6, 1940, page 1. Abstracted by George M. Wheatley, M.D.

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Planning a Health Service Program,—The school health program has three major divisions. The first consists of service activities performed by the personnel to conserve, appraise, or correct pupil health. The second division consists of instruction and practice, in which the pupil is both the active agent and the recipient. The third is administration.

The health unit of a school plant is not a luxury. The subjective satisfaction derived from pleasant surroundings, ample facilities, and adequate equipment undoubtedly favors performance.

Only by careful analysis of various factors preliminary to drawing plans is it possible to uncover the needs upon which specifications are based. These factors cannot be standardized but the following list is suggestive: (1) pupil enrollment; (2) health service personnel; (3) present size of building and provision for expansion; (4) area to be served; (5) range of service; (6) class of school; (7) program requirements; (8) social and economic status of district; (9) cost; (10) pupil health status; (11) accident record; (12) safety hazards; (13) light; (14) guidance service and possibility of a combination unit; (15) water and sewage disposal; (16) acoustics; (17) heat and ventilation; (18) furniture and equipment; (19) storage; (20) construction materials; (21) privacy; (22) color; (23) waiting room; (24) clerical service; (25) orderly traffic; (26) efficiency, and (27) location.

If no health program has been developed, or if the one in current use is old or admittedly unsatisfactory, the planning of a health unit should be held in abeyance pending the completion of an acceptable program and of definite objectives.

Given a service program, an accurate conception of functional requirements and confirmation of pupil health needs, the designer evaluates the elements, first in light of the functional requirements and then in light of the design best suited to the situation. This should be checked against the opinions of associates, particularly the health staff, and then cast as a tentative plan ready for technical refinements.

In locating the health unit the factors worthy of consideration are: (1) area of services; (2) range of service; (3) visitors; (4) transfer of emergency cases; (5) centralization of records; (6) quiet; (7) light; (8) sunshine; (9) psychological and guidance service; (10) place of accidents; (11) climate, and (12) water supply and sewage.

Various considerations favor a first floor location, preferably adjacent to the administration office. Only slightly less favorable is a location opposite the administration office in the main entrance corridor or lobby.

A unit of more than two rooms with such accessories as toilets, dressing compartments, and storage closets presents the problem of relationship.

Efforts must be made to save the nurse's steps. Medical and dental rooms should be adjacent and connected. Lesser examining rooms, the first-aid room should be offshoots of the main examining room. The infirmary should be located so that through traffic is

never necessary. Pupils' dressing rooms and toilets should connect with the examination room in order to facilitate supervision.

The tendency in planning is to compute dimensions on the basis of the standard classroom. Frequently, the health unit is from one-half to three-quarters of the classroom unit, leaving one-half or one-quarter for a storage room, toilet, or an office.

The only dimension to be remembered is the 20 feet required by the Snellen vision test plus two feet for standing space. This 22 feet must not be in line with windows or other sources of light and should not be in line with a door regularly used. Allen G. Ireland, M.D., and William P. Uhler, Jr. The Nation's Schools, February, 1940. Abstracted by R. J. Jirinec, M.D.

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Sanitation First,—Whether from modesty or neglect the tremendous importance of plumbing in the schools too often is overlooked. The best possible installation of plumbing means safe, modern fixtures and adequate piping installed by skilled plumbers under the most capable direction and supervision available.

One of the problems in school washrooms is the maintenance of superficial cleanliness. Fixtures, floors, and walls of washrooms must be so constructed and designed that caretakers can keep them in order at all times with the minimum of effort. This desirable superficial cleanliness can be maintained only by constant vigilance, fortified by routine cleanings of washrooms and fixtures.

Having achieved a standard of cleanliness on the surface, what about the supplies of pure water delivered in pipes to the school and its children? Supply pipes, being out of sight, too often are out of mind. The state authorities put their approval on the water with a regularity that is accepted generally.

But there always is the danger that a community will be lulled into an unvigilant attitude only to be awakened with a start some day when large groups of school children suddenly develop intestinal disorders. Parents are alarmed. The health authorities become inquisitive. They look for some common source of infection.

The city water supply is tested and is found absolutely pure. The water supply is tested again where it enters the school building. Here, too, it is pure.

Community authorities begin to question whether they are on the right track. But some responsible person taking part in the investigation has heard about backsiphonage. An experienced master plumber is asked to check over every part of the plumbing system for possible sources of infection. He overlooks nothing.

Direct connections between potable water supplies and unsafe water supplies may, in general, be avoided by maintaining an unenclosed air gap of sufficient size between the point of discharge

from the potable supply pipe and the highest level to which sewage or nonpotable water can possibly rise.

Where it is impossible to have an air gap between a supply opening and waste water the use of a vacuum breaker in the system is regarded as mandatory.

Additional measures for preventing leakage of unsafe water into a supply used for drinking purposes are the prevention of submerging of any part of the potable water supply pipe in a sewer or container holding unpotable water and, conversely, prevention of pipes carrying impure water or sewage from passing through or over containers of safe water.

The piping to and from swimming pools should be laid out so that chances of water from the pool getting back into the city water supply lines are reduced to a minimum.

Ninety per cent. of the hazards of backsiphonage could be prevented if water piping systems were sized and installed correctly.

How can school authorities tell whether their plumbing system is playing its natural and proper part as a true and constant promoter of health and a real preventive of disease? There is only one way. Have the entire system periodically examined from beginning to end by a competent, licensed master plumber. That done, follow the recommendations to the letter. Norman J. Radder, The Nation's Schools, February, 1940. Abstracted by R. J. Jirinec, M.D.

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NOTES

Big Gains in Child Health,—The mortality records show that the safety of infant and child life in Illinois has increased tremendously during the last quarter-century. Where 100 children under 10 years of age failed to survive in 1910, only 23 are now lost in the course of a year.*

The decline in loss of life, remarkable as it is, represents only a part of the aggregate improvement. The prevalence of illness from diarrhea, tuberculosis, and diphtheria, among the diseases shown in the table, has been reduced at the rate of about 10 cases for each death. This indicates that there are now at least 100,000 fewer cases of illness from those three diseases per year among children under the age of 10 in Illinois than was true a quarter-century ago. These remarkable gains may be attributed very largely to the work done and promoted by the State Department of Public Health—work in sanitation, immunization, quarantine, case-finding, nutrition, etc.

Diarrheal diseases, which were responsible for considerably more mortality among children than any other single hazard a quarter of a century ago, have been brought under control to a

*Since 1910 the population of the State of Illinois has increased 29%.

high degree principally through sanitation and improved diets. Purification of water, pasteurization of milk, screening homes against flies, feeding babies more scientifically, preserving foods better, particularly by means of improved domestic refrigeration, and higher standards of personal cleanliness for children have contributed toward the suppression of diarrheal diseases in children.

Diphtheria, which ranked third among fatal childhood hazards 25 years ago, has been reduced by the immunization of children against that treacherous disease. The practice of immunizing children before they reach school age has grown more and more common in recent years, and the result is less and less diphtheria.

Tuberculosis in children has been cut down (1) by finding and controlling the disease in adults and (2) by improving the health of children through better nutrition and protection against other diseases. Children who get tuberculosis are usually infected by adults. Tuberculous parents or others in a household who come constantly in contact with children are the sources of childhood infection. Finding these adult patients, giving them sanatorium care and teaching them not to expose others have protected children on a large scale.

The measures which succeed against tuberculosis and diarrhea are helpful also in preventing other diseases. Medical care has improved greatly in the last twenty-five years also. Thus fewer cases of pneumonia, measles, scarlet fever, whooping cough, and epidemic meningitis terminate fatally. Illinois Health Messenger, February 15, 1940, p. 16. How does this record compare with that in the reader's community?—Ed.

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Health Improvement,—Sir Arthur Salusbury MacNalty, chief medical officer to the Board of Education, (England) in his annual report said that for more than thirty years the school medical service has been actively promoting the health and welfare of school children. While we are far from perfection, school children of today in general health, physique, and stature are much better than they were at the beginning of this period. During the year the nutrition of 1,674,023 children was assessed in routine medical inspection. In 14.5 per cent it was excellent, in 74.2 per cent normal, in 10.8 percent slightly subnormal, and in only 0.5 per cent bad. In many cases the local school authorities supply free meals or milk. The number of children receiving either of these was 687,855 in 1938-1939. In March, 1939, the milk in schools scheme was in operation in 86.9 per cent of all the departments of public elementary schools. The schools not operating it were mainly small rural ones containing less than 5 per cent of the children; 55.6 per cent of the children were taking milk under

the scheme either free or on payment. On the advice of Professor Drummond some necessitous children were fed by the Oslo method and compared with others fed on the usual hot two course dinners. The "Oslo meal" consisted of salad (lettuce or, in winter, raw cabbage), tomatoes, cucumber, salad dressing, 1½ ounces of cheese, 3 ounces of brown bread, one-fourth ounce of butter, two-thirds of a pint of milk, and a raw apple or orange. The vegetables were made into a salad, and grated cheese was served on top. The children so fed showed a considerable advantage compared with controls. Many had not eaten brown bread before. The meal takes at least half as long again to consume as the two-course hot dinner, as there is so much hard food to masticate. Journal of the American Medical Association. March 2, 1940, p. 814.

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Cooperation,—At the beginning of the school year the teachers and the health education coordinator discussed what they felt to be the most apparent health needs of the children at Riverview.* Plans were made for working on those health problems the teachers felt they could do something about. Ways were discussed of using the school health problems for teaching health knowledge and good health practice to the children.

Following is a list of health problems on which the teachers felt they would like to work with their students at Riverview School:

1. Better and more adequate lighting in the school rooms.
2. Adequate cloak room space.
3. First-aid kit for school use.
4. Correction of dental defects.
5. More play equipment.
6. Daily handwashing at school before lunch.
7. A hot luncheon program.

Following is a detailed account of the procedure of work thus far this year by students and teachers on the problem of providing adequate light in the school rooms and protecting the vision of the students:

1. The children and teachers checked the amount of light at their school desks at various times during the day, and on cloudy and on bright days with the aid of a sight meter brought by the health education coordinator.
2. They made vision tests to find the school children with visual defects, needing correction after being shown how to use the Snellen Eye Chart.
3. They used literature on vision and lighting the rural school for study of the problem of good lighting in relation to eyesight.
4. The P.T.A. was informed of the school's need for more windows to provide adequate lighting in the school rooms.

5. The county health officer talked with the school group on visual defects and school lighting.
6. Arrangements were begun by the health department for procuring an eye examination and correction through a county relief agency for one child reported by the school group as needing visual correction and whose parents could not afford this care.
7. The sanitation inspector from the County Health Department was invited to come to the school and to tell the children and teachers where more windows should be in the room and how to construct adjustable window shades. He brought a model adjustable window shade so they could see how to make them for their own windows.
8. Several desks were moved from dark corners of the two rooms to improved positions for better lighting.
9. The sanitation inspector and the P.T.A. both contacted the county school superintendent and put the need of better lighting for this school before him.
10. Three new windows have just been added in each of the school rooms.
11. The children helped by painting the new window sashes as they were put in.
12. The sight meter was used to recheck the lighting and to determine improvement.

Results of work on other problems specified above:

1. P.T.A. bought first-aid kit for school use.
2. More play equipment acquired.
3. Daily handwashing carried out before lunch.
4. Hot lunch program being carried on with the help of the Save a Child Fund and the W.P.A.

*School and Health Department Participation in Health Education at Riverview, a Two-Room Rural School in Anderson County, Tennessee.
Ruth E. Grout, Tennessee Valley Authority, Chatanooga, Tenn.

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Oldest School House?—Believed to be the oldest school house existing in America today, is a simple one-room structure in York Village, Maine, built in 1745. The "little red school house" has been bought by the Association for the Preservation of Historical Landmarks and Buildings and will now remain on permanent exhibit.

In it can still be seen the uncomfortable benches, the draughty fireplace, the whipping post, and the old wooden bucket with gourd drinking cup attached. This school house was used as a home from 1850 to 1880 and as a store house until 1936.

Now restored to its original state, the school shows graphically the changes that have taken place in the field of education in the

last two centuries. The hemlock boards outside and the pine slabs inside, together with a birch bark lined shingle roof, formed the only protection against the elements. The heavy beams of the building are held together by round wooden pegs. School Management, February, 1940, p. 140.

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Hereditary Feeblemindedness,—In Switzerland, as in other countries, the fertility of the normal population is surpassed by that of families with hereditary feeblemindedness. Investigations in the city of Winterthur found that the families from which children came that attended special classes for backward pupils were larger than those of normal children (on the average 3.3) while the normal family groups had fallen to an average of 2.1 and 2.5, respectively. Dr. Brugger, school physician in Basel, genealogically examined the children of parents of 1,396 normal pupils and those of 427 hereditarily feebleminded pupils and published his observations in a book on "Hereditary Diseases and Their Control." The investigation plainly shows that for several decades and at all economic levels, in Basel as well as elsewhere, on the average the families in which hereditary feeblemindedness was found were larger than those of the normal group. This difference in fecundity, he said, must slowly but progressively lead to an increase of the feebleminded unless the necessary eugenic control measures are promptly taken. Journal of the American Medical Association. March 2, 1940, p. 815.

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Biological Sin,—There is an excellent article in the Atlantic Monthly for October, 1939 by Ernest A. Hooton, Professor of Anthropology at Harvard University, entitled "The Wages of Biological Sin". If we believe that man advanced to what he is from a much more primitive form of life—and biology and other sciences indicate that he did—it is equally certain that he may under some circumstances just as certainly retrogress. —Ed.

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MEETINGS

The New England Health Institute will hold its annual meeting at Hartford, Connecticut, April 15-19, 1940.

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The American Association for Health, Physical Education, and Recreation will meet in Chicago, Illinois, April 23-27, 1940. On Wednesday, April 24 at the Stevens Hotel a group of members of the **American School Health Association** will hold a luncheon meeting at 12:00 noon, Presiding, Earl E. Kleinschmidt, M.D. The following papers will be presented:

"Growth Patterns in Children," by H. A. Orvis, M.D., M.S.P.H., Health Officer, Winnetka, Illinois.

"The School Administrator Weighs the Program of Health

and Physical Education," by Francis Bacon, Principal, Evanston Township High School, Evanston, Illinois.

"Coordinating Our Efforts in the School Health Program," by Miss Alice H. Miller, Director, Health Education, the Tuberculosis Institute of Chicago and Cook County, and Instructor, Department of Preventive Medicine, Public Health and Bacteriology, Loyola University School of Medicine.

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The 69th Annual Meeting of the American Public Health Association will be held in Detroit, Michigan, October 8-11, with the Book-Cadillac Hotel as headquarters.

The American School Health Association, the Michigan Public Health Association, the International Society of Medical Health Officers, the Association of Women in Public Health, and a number of other allied and related organizations will meet in conjunction with the Association.

The Annual Meeting of the American Public Health Association is the largest and most important health convention held on this continent. It will bring 3,500 health officials to Detroit for a series of scientific meetings, covering all phases of health protection and promotion. A Health Exhibit will be held in connection with the meeting and an Institute on Health Education is scheduled prior to the official opening.